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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/577,085	05/24/2000	Larry Lee Clark	Cla*1/LUC288	5148

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EXAMINER

ZHEN, LI B

ART UNIT	PAPER NUMBER
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2126

DATE MAILED: 03/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/577,085

Applicant(s)

CLARK ET AL.

Examiner

Li B. Zhen

Art Unit

2126

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4, 5, 7 – 10, 12, 13, 15 – 18, 20 – 22, and 24 – 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,918,020 to Blackard in view of U.S. Patent No. 6,385,673 to DeMoney.

As to claim 9, Blackard teaches (column 2, lines 45 – 67; column 3, lines 1 – 15; column 5, lines 52 – 56; column 7, lines 28 – 48; column 10, lines 25 – 45) shared flow control of data (communication network includes a server for transmitting a plurality of information values at a first rate until a pacing message is received by the server) between a transport layer interface provider (communication stack 340, Fig. 3) and at least one application (client 108, Fig. 3) comprising the steps of:

receiving (data receiver 342 receives the data packet from communication stack 340, Fig. 3) from the transport layer interface provider (communication stack 340, Fig. 3) a stream of data (data packets) having a first aggregate upstream data rate (transmitting a plurality of information values at a first rate);

measuring the first aggregate upstream data rate of the stream of data (determining a first number of data values stored in the buffer pool of the client computer system);

transmitting the stream of data to the at least one application (push data receiver 342 receives the data packet, including header status information, from communication stack 340, Fig. 3); and

throttling the stream of data (pacing operation) from the first aggregate upstream data rate to a second aggregate upstream data rate (pacing operation is accomplished by the client device sending the server device a pacing primitive which contains a number of transmission time periods the server should wait in sending data to the client).

Blackard teaches (column 2, lines 45 – 55) transmitting a stream of data (transmitting a plurality of information values) but does not specify the stream of data is made up of a plurality of streams of data.

However, DeMoney teaches (column 17, lines 23 – 37) transmitting a stream of data that is made up of a plurality of streams of data (multiple continuous media streams in which data streams are delivered at a specified and possibly time-varying data rate) and flow control (control admission of new continuous streams) of the aggregate streams (video storage manager must control admission of new continuous streams to ensure that the aggregate of the guaranteed stream rates does not exceed the aggregate storage bandwidth allocated for continuous media streams).

It would have been obvious to apply the teaching of transmitting a stream of data that is made up of a plurality of streams of data as taught by DeMoney to the invention of Blackard because this would provide efficient utilization of system bandwidth.

As to claim 1, this is the same as method claim 9 except the flow control method is performed on downstream data instead of upstream data. Blackard teaches (column 12, lines 28 – 40) upstream (communication system in which client 108 is able to retrieve information from a plurality of information servers, Fig. 1) and downstream (transmission of application data from client 108 to information server 102, Fig. 1) communication. Obviously the method of flow control as taught by Blackard could also be applied to the downstream communication connection because this would provide efficient utilization of downstream connection bandwidth.

As to claim 17, this is a product claim that corresponds to method claim 1; note the rejection to claim 1 above, which also meet this product claim.

As to claim 21, this is a product claim that corresponds to method claim 9; note the rejection to claim 9 above, which also meet this product claim.

As to claim 25, Blackard teaches (column 2, lines 45 – 67; column 3, lines 1 – 15; column 5, lines 23 – 40 and 52 – 56; column 7, lines 28 – 48; column 10, lines 25 – 45) aggregate stream of data at a first data rate between at least one application process and a network (communication network includes a server for transmitting a plurality of information values at a first rate until a pacing message is received by the server), comprising:

- a flow control module (pacing mechanism);

- counting an amount of received data (determining a first number of data values stored in the buffer pool of the client computer system); and

a transport layer provider (communication stack 340, Fig. 3) coupled to the flow control module for receiving the aggregate stream of data (push data receiver 342 receives the data packet, including header status information, from communication stack 340, Fig. 3) and modifying the first data rate (pacing operation) of the aggregate stream of data in response to a signal from the flow control module in response the comparison of the aggregate counter to an aggregate threshold (pacing operation is accomplished by the client device sending the server device a pacing primitive which contains a number of transmission time periods the server should wait in sending data to the client). As to aggregate stream, see the rejection to claim 9. As to decrementing a counter, see the rejection to claim 11.

As to claims 2, 10, 18, and 22, Blackard as modified teaches (column 3, lines 1 – 16 of Blackard) counting the amount of received data (determining a first number of data values stored in the buffer pool of the client computer system) but does not specify a counter. Obviously, there would need to be a counter variable in order to represent the number of data stored in the buffer.

As to claims 4, 12, 20, and 24, Blackard as modified teaches (column 3, lines 1 – 17; column 5, lines 23 – 45 of Blackard) comparing the aggregate upstream counter (first number of data values stored in the buffer pool) to a predetermined (threshold level) downstream aggregate threshold, and notifying the transport layer interface provider (transmitting a pacing message to the server) to throttle the plurality of streams of data (server withholds sending data for a period of time sufficient to drop the client buffer utilization to a level below a threshold level).

As to claims 5 and 13, Blackard as modified teaches (column 9, line 57 – column 10, line 5 of DeMoney) identifying an individual upstream stream of data from the plurality of streams of data (each stream may have a different contract rate), and counting from the individual upstream stream of data an individual amount of received data with an individual upstream counter (an individual stream may arbitrarily range in rate up to the contract rate wherein the total aggregate for all stream rates does not exceed the total aggregate streaming capacity of the server system).

As to claims 7 and 15, Blackard as modified teaches (column 9, line 57 – column 10, line 5 of DeMoney) comparing the individual upstream (an individual stream may arbitrarily range in rate) counter to a predetermined (contract rate) upstream individual threshold (an individual stream may arbitrarily range in rate up to the contract rate wherein the total aggregate for all stream rates does not exceed the total aggregate streaming capacity of the server system).

As to claims 8 and 16, Blackard as modified teaches (column 8, lines 1 – 17 of Blackard) an operating system such as AIX, which is a type of Unix operating system, is used to coordinate the functions of the various components of the client and server. When the client and server are running a Unix operating system, the step of throttling the stream of data would obviously be performed by Unix stream functions.

As to claim 26, this is an apparatus claim that is a combination of method claims 13 and 15; note the rejection to claims 13 and 15 above, which also meet this apparatus claim.

3. Claims 3, 6, 11, 14, 19, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blackard and DeMoney in view of U.S. Patent No. 5,418,912 to Christenson.

As to claims 3, 11, 19, and 23, Blackard teaches counting the amount of received data (see claim 10) but does not specify incrementing and decrementing a counter.

However, Christenson teaches (column 5, lines 5 – 15 and 33 – 51; column 5, line 52 – column 6, line 10) controlling data transmission (session layer 24 is provided with a control mechanism for limiting the amount of data which may be sent to the data link control layer 28, Fig. 2) and counting amount of received data with a counter (flood control counter FCC...is used to count session packets), incrementing (FCC is incremented) and decrementing (decrements the FCC) the counter.

It would have been obvious to apply the teaching of incrementing and decrementing a counter to represent the amount of received data as taught by Christenson to the invention of Blackard because this would dynamically measure the amount of data being transferred and this information is used to make flow control decisions and prevent problems such as buffer overflow.

As to claims 6 and 14, Blackard as modified teaches (column 9, line 57 – column 10, line 5 of DeMoney) counting an individual amount of received data (an individual stream may arbitrarily range in rate up to the contract rate wherein the total aggregate for all stream rates does not exceed the total aggregate streaming capacity of the server system). As to incrementing and decrementing a counter, see the rejection to claims 3 and 11 above.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,517,622 to Ivanoff teaches pacing communications in a distributed network.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li B. Zhen whose telephone number is (703) 305-3406. The examiner can normally be reached on Mon - Fri, 8am - 4:30pm.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Li B. Zhen
Examiner
Art Unit 2126

lbz
March 5, 2003


ALVIN OBERLEY
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